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**REMARKS**

This response is intended as a full and complete response to the final Office Action mailed on May 6, 2004. In the Action, the Examiner notes that claims 32-44 are pending, of which claims 32-44 stand rejected.

In view of the following discussion, the Applicants submit that none of the claims now pending in the application are non-enabling, anticipated, or obvious under the respective provisions of 35 U.S.C. §112, §102, and §103. Thus, the Applicants believe that all of these claims are now in allowable form.

**Reply to "Response to Arguments"**

The Applicants acknowledge the positions taken by the Examiner in the "Response to Arguments" section of the subject Office action (page 2). Without any disrespect to the Examiner, the Applicants ask the Examiner to reconsider those positions.

The Examiner relies on Figures 2 and 4, and their supporting text, in Adams to disclose a multiplex switch that multiplexes a plurality of formatted content streams and a non-content stream to produce an output stream for a communication channel. The Examiner further relies on those portions of Adams to disclose formatting the non-content streams. However, contrary to the Examiner's position, Adams does not disclose or even suggest formatting a non-content stream.

The Examiner stated that the application data stored in buffer 402 is preferably in the form of an MPEG-2 transport packet. That is not accurate: Adams discloses that the data stored in the *output buffer 406* (not the application buffer 402) is *preferably* in the form of an MPEG-2 transport packet. That makes sense because the output buffer 406 also stores video content from the video encoders 206.

Adams discloses that the application server 202 data is IP formatted, but that other formats can be used, see column 3, lines 42-45. Nowhere does Adams suggest formatting the application (non-content) data, and consequently Adams does not suggest formatting that data in the multiplexer switch. However,

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independent claims 32 and 40 recite formatting non-content data using the multiplexer switch.

In view of at least the foregoing differences between Adams and the subject invention, the Applicants request withdrawal of all rejections and allowance of all pending claims.

### **REJECTION OF CLAIMS UNDER 35 U.S.C. §102**

The Examiner rejected claims 32-33, 36-41 and 43-44 under 35 U.S.C. 102(e) as being anticipated by Adams (U.S. Patent 6,044,396, issued March 28, 2000, hereinafter "Adams"). Applicants respectfully traverse the rejection.

Adams discloses a system for allocating resources by utilizing a multiplexer that selects from among encoded information streams according to a round robin scheme. Each video stream has a video buffer. "If and when all of the video buffers are empty then a selector passes data from the application buffer to the output buffer. The selector will continue reading from the application buffer until data is detected in one or more of the video buffers. At that time, the selector will again read from the video buffers in a round-robin fashion." (See Adams column 4, line 52 to column 5, line 8; and Adam's FIG. 5).

Applicants' independent claims 32 and 40 recite, respectively:

32. "In an information distribution system comprising server equipment for providing both content and non-content data to subscriber equipment, said server equipment comprising:  
a multiplex switch for multiplexing a plurality of formatted content streams from server modules to produce an output stream that is adapted for transport via a communication channel, wherein said multiplexing of said formatted content streams is statistically performed; wherein said multiplex switch is further for formatting non-content data and for selectively multiplexing formatted non-content data into said output stream, and wherein said multiplexing of formatted non-content data is on a bandwidth availability basis that is predicted based on said multiplexing of said formatted content streams." (Emphasis added)

40. "A method of providing content and non-content data to subscriber comprising the steps of:

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statistically multiplexing a plurality of formatted content streams to produce an output stream that is adapted for transport via a communication channel;

formatting non-content data to fit the output stream;  
predicting bandwidth availability based on the statistical multiplexing of the formatted content streams; and  
selectively multiplexing formatted non-content data into said output stream on a bandwidth availability basis." (Emphasis added).

"Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim" (Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 730 F.2d 1452, 221 U.S.P.Q. 481, 485 (Fed. Cir. 1984) (citing Connell v. Sears, Roebuck & Co., 722 F.2d 1542, 220 U.S.P.Q. 193 (Fed. Cir. 1983)) (emphasis added). Adams fails to disclose each and every element of the claimed invention, as arranged in the claims.

In particular, Adams discloses "a selector transmit processor 408 reads data from the output buffer for modulation onto a channel and transmission over the network 110. The data stored in each buffer slot is preferably in the form of an MPEG-2 transport packet.

"The selector 404 of the present invention decides which data stream is to be given access to a channel of the network 110. Because of the real time constraints on the display of video data, the video streams must be given higher priority than the application data. If a video packet is lost or delayed, such an error will cause a noticeable effect on the video display. In contrast, the application or control information transmitted is typically not as sensitive to packet delay or loss. Accordingly, the selector 404 allocates the application data stream to a low priority access to the network. In accordance with this priority allocation, the selector selects the data stream to be forwarded to the network 110 according to the state diagram of FIG. 5." (See, Adams, col. 4, lines 33-64).

Nowhere in Adams is there any teaching or suggestion of the feature "wherein said multiplex switches further for formatting non-content data and for selectively multiplexing formatted non-content data into said output stream."

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Specifically, Applicants' invention provides that the "the IP to HS-ASI conversion circuit 232 receives data from, illustratively, an Ethernet link coupled to a local area network/wide area network 116, or any network interface supporting IP packets, e.g. frame relay, ATM and the like. Illustratively, the internet protocol (IP) data is converted to HS-ASI packets in the manner previously described. The HS-ASI packets so formed are then coupled to the switch module 234 via the signal path DATA', where they are stored in the buffer DATA' 235. As previously noted, upon determining that the bandwidth capability of the switch module 234 is less than maximally utilized, the switch module 234 causes the HS-ASI packets within the DATA' buffer 235 to be inserted into the output stream for subsequent processing by the transport processor 150.

Thus, the above-described switch 230 is capable of multiplexing content information from various server modules 220, data from a remote data network and data from a local data source into an output stream having as format appropriate for subsequent transport via the in-band data channels of the interactive information distribution system 100 of FIG. 1." (See, applicants' specification, page 14, lines 19-34).

In other words, Applicants' invention provides an IP to HS-ASI conversion module 232, which formats a non-content data for selectively multiplexing the formatted non-content data into the output stream. By contrast, Adams merely discloses that data stored in each buffer slot is preferably in the form of an MPEG-2 transport packet. That is, the application buffer 402 of Adams simply receives the encoded content from the application server 202, however nowhere is there any teaching, or even suggestion that such application server content is reformatted by the selector circuit 404. Thus, the operative invention is completely different from Adams since applicants' invention formats the non-content data, while Adams does not teach or suggest that any such formatting is performed.

As such, applicants submit that independent claims 32 and 40 are not anticipated and fully satisfy the requirements of 35 U.S.C. §102 and are patentable thereunder. Furthermore, claims 33, 36-39, 41, and 43, and 44 respectively depend from independent claims 32 and 40 and recite additional features thereof. As such,

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and at least for the same reasons as discussed above, applicants submit that these dependent claims are also not anticipated and fully satisfy the requirements under 35 U.S.C. §102 and are patentable thereunder. Therefore, applicants respectfully request that the rejections be withdrawn.

**REJECTION OF CLAIMS UNDER 35 U.S.C. §103(a)**

The Examiner rejected claims 34-35 and 42 under 35 U.S.C. §103(a) as being unpatentable over Adams. Applicants respectfully traverse the rejections.

To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). All words in a claim must be considered in judging the patentability of that claim against the prior art. *In re Wilson*, 424 F.2d 1382, 1385, 165 U.S.P.Q. 494 496 (C.C.P.A. 1970), M.P.E.P. 2143.03. Moreover, the mere fact that a prior art structure could be modified to produce the claimed invention would not have made the modification obvious unless the prior art suggested the desirability of the modification. *In re Fritch*, 23 U.S.P.Q.2d 1780, 1783 (Fed. Cir. 1992); *In re Gordon*, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984).

The test under 35 U.S.C. §103 is not whether an improvement or a use set forth in a patent would have been obvious or non-obvious; rather the test is whether the claimed invention, considered as a whole, would have been obvious. *Jones v. Hardy*, 110 U.S.P.Q. 1021, 1024 (Fed. Cir. 1984) (emphasis added). Thus, it is impermissible to focus either on the "gist" or "core" of the invention, *Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc.*, 230 U.S.P.Q. 416, 420 (Fed. Cir. 1986) (emphasis added). Moreover, the invention as a whole is not restricted to the specific subject matter claimed, but also embraces its properties and the problem it solves. *In re Wright*, 6 U.S.P.Q. 2d 1959, 1961 (Fed. Cir. 1988) (emphasis added).

Adams fails to teach or suggest applicants' invention as a whole.

Claims 34, 35, and 42 respectively depend from independent claims 32 and 40 and recite additional features thereof. For example, dependent claim 34, when combined with independent claim 32 recites in part:

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"In an information distribution system comprising server equipment for providing both content and non-content data to subscriber equipment, said server equipment comprising:

a multiplex switch for multiplexing a plurality of formatted content streams from server modules to produce an output stream that is adapted for transport via a communication channel, wherein said multiplexing of said formatted content streams is statistically performed; wherein said multiplex switch is further for formatting non-content data and for selectively multiplexing formatted non-content data into said output stream, and wherein said multiplexing of formatted non-content data is on a bandwidth availability basis that is predicted based on said multiplexing of said formatted content streams." (Emphasis added)

The teachings of Adams were discussed above. In particular, nowhere in Adams is there any teaching or suggestion of the future "wherein said multiplex switches further for formatting non-content data and for selectively multiplexing formatted non-content data into said output stream." That is, Adams fails to teach, or even suggest, that the selector of Adams has any capability or that it is desirable to format the non-content data prior to multiplexing such non-content data. Therefore, Adams fails to teach or suggest applicants' invention as a whole.

As such, applicants submit that claims 34-35 and 42 are not obvious and fully satisfy the requirements of 35 U.S.C. §103 and are patentable thereunder. Therefore, applicants respectfully request that the rejections of claims 34-35 and 42 under 35 U.S.C. §103(a) be withdrawn.

#### **THE SECONDARY REFERENCES**

The secondary references made of record are noted. However, it is believed that the secondary references are no more pertinent to applicants' disclosure than the primary references cited in the office action. Therefore, applicants believe that a detailed discussion of the secondary references is not necessary for a full and complete response to this office action.

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